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13. ABSTRACT (Maximum 200 words) Combat Engineers engage in heavy construction activities but like other Army units, also perform weightbearing physical activities such as running and marching. We investigated associations between training injuries and physical fitness over a one year period in 147 combat engineers. Incidence of new musculoskeletal injuries was documented by a complete review of each soldier's medical record. Physical fitness was measured by the standard Army Physical Fitness Test. Soldiers performed the maximum number of pushups (PU) in 2 min, the maximum number of situps (SU) in 2 min and a 2-mile run for time. Sixty-eight percent of the soldiers suffered one or more training injuries. Subjects performed an average (+SD) 61+13 PU, 65+11 SU and ran an average time of 14.6+1.3 min. Subjects were divided into quartiles based on their scores in each fitness test. A 2X4 chi-square test (CST) and linear trend test (LTT) were used to compare quartiles (Q) for those injured at least once vs those not injured. For run time, soldiers in the fastest quartile were at lower injury risk than those in the slower quartiles (CST p=0.03, LTT p=0.02, Risk Ratio for Q1 vs Q4=1.5). There were no significant differences among the quartiles for PU (truncated after 200 words)				
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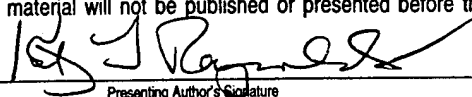
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ASSOCIATION OF TRAINING INJURIES AND PHYSICAL FITNESS IN U.S. ARMY COMBAT ENGINEERS

K Reynolds, J Knapik, FACSM, R Hoyt, M Mayo, J Bremner, B Jones. U.S. Army Research Institute of Environmental Medicine, Natick, MA 01760-5007

Combat Engineers engage in heavy construction activities but like other Army units, also perform weightbearing physical activities such as running and marching. We investigated associations between training injuries and physical fitness over a one year period in 147 combat engineers. Incidence of new musculoskeletal injuries was documented by a complete review of each soldier's medical record. Physical fitness was measured by the standard Army Physical Fitness Test. Soldiers performed the maximum number of pushups (PU) in 2 min, the maximum number of situps (SU) in 2 min and a 2-mile run for time. Sixty-eight percent of the soldiers suffered one or more training injuries. Subjects performed an average (\pm SD) 61 ± 13 PU, 65 ± 11 SU and ran an average time of 14.6 ± 1.3 min. Subjects were divided into quartiles based on their scores in each fitness test. A 2X4 chi-square test (CST) and linear trend test (LTT) were used to compare quartiles (Q) for those injured at least once vs those not injured. For run time, soldiers in the fastest quartile were at lower injury risk than those in the slower quartiles (CST $p=0.03$, LTT $p=0.02$, Risk Ratio for Q1 vs Q4=1.5). There were no significant differences among the quartiles for PU (CST $p=0.92$, LTT $p=0.97$) or SU (CST $p=0.74$, LTT $p=0.79$). These data suggest that lower aerobic fitness is associated with musculoskeletal injuries in physically active combat engineers.

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